

**COMMONWEALTH OF VIRGINIA**  
**Department of Environmental Quality**  
**Valley Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

Columbia Gas Transmission Corporation  
Shenandoah Compressor Station  
Page County, Virginia  
Permit No. VRO81139

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Columbia Gas Transmission Corporation has applied for a renewal of the Title V Operating Permit for its natural gas compressor station in Page County, Virginia. The Department has reviewed the application and has prepared a **draft** Title V Operating Permit.

Engineer/Permit Contact: *DRAFT* Date: *DRAFT*  
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Air Permit Manager: *DRAFT* Date: *DRAFT*  
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## **FACILITY INFORMATION**

### Permittee

Columbia Gas Transmission, LLC  
1700 MacCorkle Avenue SE  
Charleston, West Virginia 25314

### Facility

Shenandoah Compressor Station

On the northwest side of State Route 685, approximately 1.7 miles southwest of the northernmost intersection with U.S. 340  
Page County, Virginia

County-Plant Identification Number: 51-139-0027

## **SOURCE DESCRIPTION**

NAICS Code: NAICS 486210 – Natural Gas Transmission

Shenandoah Compressor Station (SCS) is a natural gas compressor station. Natural gas is received via gas pipelines from an upstream compressor station, compressed, and pumped into outlet pipelines for transmission to a downstream station. The natural gas is compressed using two turbines, site-rated at 5,027 horsepower (hp) each. On-site auxiliary equipment includes one emergency generator rated at 135 hp. Also on-site is a 2.1 MMBtu/hr heating system boiler.

The existing Title V permit for the facility was issued on April 5, 2009, modified on June 5, 2009 and expires on April 5, 2014. The existing Title V permit allows operation of two natural gas-fired turbines (each rated at 5,027 hp), one natural gas-fired emergency generator rated at 135 hp, and one 2.1 MMBtu/hr natural gas-fired boiler.

The facility is a Title V major source of nitrogen oxides. The facility is considered an area source of hazardous air pollutants (HAPs). This source is located in an attainment area for all pollutants. The facility is currently permitted under a minor NSR permit dated August 23, 1991, as amended January 27, 1994, March 10, 1995, August 6, 1998, and September 16, 2008. The permit amendment on January 27, 1994 has been superseded by subsequent amendments.

## **COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, was most recently conducted on February 7, 2012. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

## **CHANGES TO EXISTING TITLE V PERMIT**

The following are changes to the existing Title V permit since the last renewal:

- Facility Information: The names of the responsible official and contact person have been updated along with the Permittee address.
- Permit Formatting and General Conditions: The format of the permit and General Conditions were updated to reflect changes made to the Title V boilerplates since Columbia Gas' permit was issued.
- Fuel Burning Equipment: The requirements of 40 CFR 63 (MACT) Subpart ZZZZ for the existing natural gas-fired emergency generator were added to the Title V permit. The compliance date for the existing emergency generator is October 19, 2013.

## EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

**Table I. Significant Emission Units**

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity *	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
Combustion Turbines							
1	EO1	Combustion Turbine #1 (Natural gas fired), Allison 501-KC5 (Constructed 1992)	48.6 MMBtu/hr (Input) 5,027 hp (Output)	-	-	-	8/23/1991, 1/27/1994, 3/10/1995, 8/6/1998, and 9/16/08
2	EO2	Combustion Turbine #2 (Natural gas fired), Allison 501-KC5 (Constructed 1992)	48.6 MMBtu/hr (Input) 5,027 hp (Output)	-	-	-	
Fuel Burning Equipment							
G1	G1	Auxiliary (Emergency) Generator Waukesha F11GSI (Constructed 1992)	1.6 MMBtu/hr (Input) 135 hp (Output)	-	-	-	8/23/1991, 1/27/1994, 3/10/1995, 8/6/1998 and 9/16/08
BLR1	BL1	Heating Boiler, Hydrotherm MR-1500-BPV (Constructed 1992)	2.1 MMBtu/hr (Input)	-	-	-	

\*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

## EMISSIONS INVENTORY

A copy of the 2012 annual emission update is attached as Attachment A. Emissions are summarized in the following tables:

**Table II. 2012 Actual Criteria Pollutant Emissions  
for the Shenandoah Compressor Station**

<b>2012 Criteria Pollutant Emission in Tons/Year*</b>						
<b>Emission Unit</b>	<b>VOC</b>	<b>CO</b>	<b>SO<sub>2</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>NO<sub>x</sub></b>
Combustion Turbine#1	0.45	7.85	2.1E-05	5.7E-05	5.7E-05	11.21
Combustion Turbine #2	0.46	7.97	2.2E-05	5.8E-05	5.8E-05	11.38
Generator	2.4E-05	1.4E-03	4.1E-07	1.1E-06	1.1E-06	1.4E-03
Boiler	2.2E-03	0.35	2.5E-03	3.1E-02	3.1E-02	0.41
Fugitive Emissions	2.16	--	--	--	--	--
Total	3.07	16.17	2.5E-03	3.1E-02	1.3E-04	23.00

\* Values in emissions report are rounded

**Table III. 2012 Actual Hazardous Air Pollutant Emissions  
for the Shenandoah Compressor Station**

<b>Pollutant</b>	<b>2012 Hazardous Air Pollutant Emission in Tons/Year</b>
Formaldehyde	1.23

## **EMISSION UNIT APPLICABLE REQUIREMENTS - (Combustion Turbines #1 and #2)**

### **Limitations**

The following limitations are state BACT requirements from the minor NSR permit issued on 8/23/91, as amended on 1/27/94, 3/10/95, 8/6/98, and 9/16/08. Please note that the condition numbers are from Part I of the minor NSR permit. A copy of the permit is attached as Attachment B with the amendments as Attachment C, D, E and F:

- Condition 4: NO<sub>x</sub> and CO emissions from the turbines shall be controlled by lean fuel-to-air ratio.
- Condition 6: The condition provides a limit on fuel consumption for the turbines.
- Condition 9: The condition provides the emission limits for criteria pollutants for each turbine.
- Condition 12: Visible emissions are limited to five percent for the turbines.
- Condition 15: The condition establishes a limit on type of fuel to be used in turbines; natural gas with a sulfur content no greater than 20 grains per 100 scf of sulfur, equivalent to 0.068% or less by weight.

### **Monitoring and Recordkeeping**

The monitoring and recordkeeping requirements in Conditions 7, 17, and 18 of the NSR permit have been modified to meet Part 70 requirements.

Condition 7 of the NSR permit requires that each turbine have a permanently installed fuel flow rate gauge with a cubic feet per second readout, and be readily accessible. Condition 17 of the NSR permit includes requirements for maintaining records of all emission data and operating parameters. These records include monthly natural gas consumption (in million cubic feet) by each turbine, DEQ approved pollutant specific emission factors and sulfur content of the natural gas. The fuel consumption limits in Condition 6 of the minor NSR permit are based on the turbines operating at the rated capacity based on the manufacturer's recommendation. Calculations have been included in Attachment G to demonstrate how the emission limits were obtained. The fuel flow rate gauge and associated recordkeeping provide a means of establishing continued compliance with the fuel consumption limitations in Condition 6 of the minor NSR permit.

The turbines in operation at the Shenandoah Compressor Station are subject to 40 CFR 60 (NSPS) Subpart GG. The NSPS contains requirements for SO<sub>2</sub> and NO<sub>x</sub> emissions. The permittee must comply with the alternative sulfur monitoring requirements of 60.334(h)(3),

which have been incorporated into the permit. This requires the permittee to maintain records of either a valid purchase contract or tariff sheet or transportation contracts or representative sampling data for the gaseous fuel, indicating that the maximum sulfur content of the fuel is 20.0 grains of sulfur (0.068% sulfur by weight) per 100 standard cubic feet or less. Compliance with SO<sub>2</sub> requirements is demonstrated by complying with the natural gas sulfur content limit of 20.0 grains of sulfur (0.068% sulfur by weight) per 100 standard cubic feet or less. Condition 18 of the NSR permit requires the facility to maintain records of either: a valid purchase contract, tariff sheet, transportation contracts, or representative sampling data for the gaseous fuel to indicate that maximum total sulfur content. The requirement to maintain records of the maximum total sulfur content provides a means to establish continued compliance with the sulfur content limitation in Condition 15 of the minor NSR permit.

Compliance with NO<sub>x</sub> emission requirements was demonstrated by stack testing performed on July 1, 1993. Since the turbines are fueled only by pipeline-quality natural gas with no add-on controls, there is no reason to expect the NO<sub>x</sub> emissions will exceed those measured during the stack test performed on July 1, 1993.

The hourly emission limits established during the ozone season of April 1 through October 31 for criteria pollutants (SO<sub>2</sub>, NO<sub>x</sub>, CO and VOC) are based on the manufacturer's specifications at the rated capacity of the turbines. Therefore, if the turbines are operated at capacity, or below, there should not be a violation of the hourly emission rates. Calculations have been included in Attachment G to demonstrate how the limits are obtained.

During the cold months, the manufacturer of the turbines (Allison Industrial & Marine Applications Engineering) has recommended different hourly emission rates. As with all turbines, the compressor turbines are sensitive to ambient temperatures which in turn affects the horsepower output and emissions from the turbines. Per the manufacturer, an absolute maximum horsepower is delivered by these turbines when operating at an ambient temperature of -20<sup>0</sup> F. At this temperature, each turbine delivers 5810 hp and higher emissions are expected. The hourly emission limits established during the non-ozone season of November 1 through May 30 are based on absolute maximum horsepower of the turbines and based upon the manufacturer's recommendations.

Annual emissions from the operation of the turbine will be calculated using the following equation:

$$E = F \times N \times H$$

..... Equation 1

Where:

E	=	Emission Rate (lb/time period)
F	=	Pollutant specific emission factors as follows:

SO <sub>2</sub>	=	1.22E-04 lb/hp-hr
NO <sub>x</sub>	=	3.17E-03 lb/hp-hr
CO	=	2.23E-03 lb/hp-hr
VOC	=	1.28E-04 lb/hp-hr
PM10	=	1.61E-04 lb/hp-hr

N	=	operating time period
H	=	horse power rating of the turbine

Calculations have been included in Attachment G to demonstrate how annual emission limits were obtained and practically prohibit the turbines from the ability to exceed the emission limitations specified in the permit.

There is no monitoring for the visible emission limits. The "EPA Final Periodic Monitoring Guidance" specifically gives the example of turbines burning pipeline natural gas only, and states that federally enforceable requirements for equipment maintenance can satisfy the requirement for periodic monitoring of compliance with the opacity standard. Condition 8 of the Title V permit requires the turbines to be controlled by proper operation and maintenance in addition to training in the operation of the equipment. Condition 12 of the Title V permit requires the facility to develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance; Condition 14 of the Title V permit also requires the facility to records of the required turbine operator training including date and nature of training provided. The monitoring and recordkeeping in Conditions 12 and 14 of the Title V permit provide adequate means of demonstrating compliance with the maintenance and operating requirements in Condition 8 of the Title V permit.

### **Compliance Assurance Monitoring (CAM) Plan Applicability**

The CAM plan does not apply to the combustion turbines; the combustion turbines do not use a control device to achieve compliance with the emission limitations.

### **Testing**

The permit does not require source emission tests. Condition 15 of the Title V permit requires that if testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.

The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **Reporting**

No specific reporting has been included in the permit.



## Streamlined Requirements

Part I, Condition 16 has not been included, as all applicable requirements from NSPS Subpart GG, except for the requirement to determine fuel-bound nitrogen, have been included in the permit. As explained in the attached letter from EPA (Attachment H), nitrogen monitoring can be waived for pipeline quality natural gas, since there is no fuel-bound nitrogen and the free nitrogen does not contribute appreciably to NO<sub>x</sub> emissions.

Part I, Condition 14 and Part II, Condition 2 which required Stack testing for NO<sub>x</sub> were completed on July 1, 1993. Therefore, these stack testing requirements have not been included.

New source construction and start-up notification requirements in Part II, Condition 1 have not been included as they have already been fulfilled.

Facility design and construction requirements in Part II, Condition 3 have not been included.

Part II, Condition 8, regarding invalidation of permit if not constructed within 18 months from the date of the permit, has not been included.

The Combustion Turbines have the following applicable requirements from the NSPS (40 CFR 60) Subpart GG and 9 VAC 5-50-410:

§60.332 (a)(2): Allowable NO<sub>x</sub> emissions shall not exceed the following:

$$STD = 0.150 \frac{14.4}{Y} + F$$

..... Equation 2

Where:

STD = Allowable NO<sub>x</sub> emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = Manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO<sub>x</sub> emission allowance for fuel-bound nitrogen as defined in §60.332 (a)(3).

§60.334(h)(3): The owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in

§60.331(u), regardless of whether an existing custom schedule approved by the administrator for subpart GG requires such monitoring.

The allowable NO<sub>x</sub> emission limit in the minor NSR permit (Condition 9 of 8/23/91 Permit as amended in 3/10/95) is more stringent than the one in Subpart GG (as shown in Attachment F). Therefore, the limit from the minor NSR permit has been included in the Title V permit.

The fuel sulfur content requirement in the NSR permit (Condition 15 of 8/23/91 Permit, as amended on 9/16/08) was changed to equal the natural gas fuel sulfur content limit in Subpart GG. Therefore, the limit from the minor NSR permit has been included in the Title V permit.

The sulfur dioxide standard at 40 CFR 60.333(b) is met as Columbia Gas does not burn fuel in the turbines containing total sulfur in excess of 0.8 percent by weight. Only natural gas is burned in the turbines.

The testing requirements of NSPS Subpart GG (40 CFR 60.335) have been fulfilled and have not been included in the Title V permit.

Remaining general conditions in Part II of the NSR permit have been modified to meet the general condition requirements of 40 CFR Part 70 and 9 VAC 5-80-110.

## **EMISSION UNIT APPLICABLE REQUIREMENTS - (Emission Units G1 & BLR1)**

### **Limitations**

The following limitations are state BACT requirements from the minor NSR permit issued on 8/23/91, and amended on 1/27/94, 3/10/95, 8/6/98 and 9/16/08. Please note that the condition numbers are from Part I of the minor NSR permit. A copy of the permit is attached as Attachment B with the amendments as Attachment C, D, E and F:

- Condition 5: Limit on operating hours for auxiliary generator.
- Condition 8: Limit on fuel consumption for the boiler.
- Condition 10: Emission limits for criteria pollutants for boiler.
- Condition 11: Emission limits for criteria pollutants for auxiliary generator.
- Condition 12: Visible emission limit of 5 percent for boiler stack.
- Condition 13: Visible emission limit of 10 percent for the auxiliary generator stack.
- Condition 15: Limit on type of fuel to be used in auxiliary generator and heating boiler.  
Natural gas with a sulfur content of 0.068 percent or less by weight.

In addition to the minor NSR requirements, the emergency generator (G1) is subject to National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63 Subpart ZZZZ). The emergency generator is an existing stationary spark-ignition (SI) engine with a site rating less than 500 horsepower (HP) located at an area source of HAPs. The following conditions have been added to the Title V permit; condition numbers refer to the Title V permit:

- Condition 24: The condition establishes that the emergency generator (G1) must be operated in accordance with MACT, Subpart ZZZZ, except where the Title V permit is more restrictive.
- Condition 25: The condition establishes the operational restrictions on the emergency generator (G1).
- Condition 26: The condition establishes the maintenance and work practice standards for the emergency generator (G1).
- Condition 27: During periods of startup the permittee must minimize the time spend at idle for the emergency engines (G1) and minimize the engine's startup

time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply, in accordance with Table 2d of the MACT, Subpart ZZZZ.

The MACT establishes maintenance requirements for the generator (G1) as specified above. Additionally, the MACT establishes the operational conditions that define emergency operation.

Since the unit was constructed prior to June 12, 2006, the unit is not subject to the requirements of 40 CFR 60 Subpart JJJJ, as per 40 CFR 60.4230(a)(4).

### **Monitoring and Recordkeeping**

The monitoring and recordkeeping requirements in Condition 17 of the NSR permit have been modified to meet Part 70 requirements.

The permit includes requirements for maintaining records of all emission data and operating parameters. These records include yearly natural gas consumption (in million cubic feet) by the boiler, and annual operating hours of the auxiliary generator.

The hourly emission limits established for boiler and auxiliary generator are based on the capacity of the boiler and generator, respectively. Therefore, if the boilers are operated at capacity, or below, there should not be a violation of the hourly emission rates. Calculations have been included in Attachment G to demonstrate how the limits are obtained.

The annual emission limits established for criteria pollutants are based on the natural gas throughput limit and operating hours limit contained within the permit. As long as the natural gas throughput limit and operating hours limit are not violated, there is very little chance that criteria pollutants emission limits will be violated. Therefore, recordkeeping demonstrating compliance with the natural gas throughput limit and operating hours limit can also be used to demonstrate compliance with criteria pollutant emission limits, satisfying the periodic monitoring requirement.

Actual emissions from the operation of the heating boiler will be calculated using the following equation:

$$E = F \times N$$

..... Equation 3

Where:

E	=	Emission Rate (lb/time period)
F	=	Pollutant specific emission factors as follows:

$$\begin{aligned} \text{NO}_x &= 100 \text{ lb/million ft}^3 \\ N &= \text{Natural gas consumed (million ft}^3\text{/time period)} \end{aligned}$$

Actual emissions from the operation of the auxiliary generator will be calculated using the following equation:

$$E = F \times N \times H \quad \text{..... Equation 4}$$

Where:

$$\begin{aligned} E &= \text{Emission Rate (lb/time period)} \\ F &= \text{Pollutant specific emission factors as follows:} \\ \text{CO} &= 3.08\text{E-}02 \text{ lb/hp-hr} \\ \text{NO}_x &= 3.08\text{E-}02 \text{ lb/hp-hr} \\ N &= \text{operating period} \\ H &= \text{horsepower rating of the generator} \end{aligned}$$

Calculations have been included in Attachment G to demonstrate that if Columbia Gas operates this equipment at design capacity and in accordance with annual fuel throughput/hours of operation limitations, then the emission limits will not be violated.

There is no monitoring for the visible emission limits. As long as the natural gas-fired boiler and generator are operated properly, it can be assumed that the opacity limitations will not be violated. Maintenance of records demonstrating that the operators have been properly trained along with the maintenance of operating procedures, in accordance with Conditions 29 and 30 of the Title V permit, will ensure compliance with the opacity limitation and satisfy the periodic monitoring requirements.

In addition to the monitoring and recordkeeping established above, the following monitoring and recordkeeping conditions were established to determine compliance with the MACT Subpart ZZZZ limitations; Condition numbers refer to the Title V permit:

*Condition 28* establishes that the permittee must install non-resettable hour meters on the emergency RICE in accordance with 40 CFR 63.6625(f) for the emergency generator (G1). The hour meter shall be provided with adequate access for inspection.

*Condition 29* establishes that the permittee shall develop a maintenance plan that provides to the extent practicable for the maintenance and operation of each engine in a manner consistent with good air pollution control practice for minimizing emissions, for

the emergency generator (G1) in accordance with 40 CFR 63.6625(e).

*Condition 30 (c and d)* establishes that the permittee must keep records of all maintenance conducted on the emergency generator (G1) as well as hours of operation that are recorded on the hour meter.

The requirements for installation of non-resettable hour meters, provided in Condition 28, establishes the means of determining compliance with the hour limitations specified in Conditions 25 and 26 of the Title V permit. The facility is required to keep records of the hours of operation of each generator to ensure the limitations of Conditions 25 and 26 are met.

The required maintenance and operating plan (Condition 29 of the Title V permit) assures compliance with MACT requirements to maintain and operate the engine in accordance with the manufacturer's written instructions. The maintenance and operating plan, as well as records of all scheduled and unscheduled maintenance and operator training will also help to establish reasonable assurance of compliance with the emission limits and visible emission standards established in the permit. The facility is also required to maintain hours of operation for the emergency generator (G1), to ensure that each continues to meet the definition of emergency-use, as found in the Virginia Regulations and the MACT.

#### **Compliance Assurance Monitoring (CAM) Plan Applicability**

The CAM plan does not apply to the boiler (BLR1) and generator (G1), as these emission units do not use a control device to achieve compliance with the emission limitations.

#### **Testing**

The permit does not require source emission tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

#### **Reporting**

The generator (G1) is exempt from notification requirements under 40 CFR 63.6645(a)(5), therefore there are no initial notification or reporting requirements associated with the MACT.

No specific reporting has been included in the permit.

#### **Streamlined Requirements**

There are no streamlined requirements for the boiler (BLR1) and generator (G1).

## **GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### **Comments on General Conditions**

#### Permit Expiration (Conditions 36 to 41)

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-09”.

These general condition cite(s) the Article(s) that follow(s):

Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Operating Permits for Stationary Sources.

These general conditions cite the sections that follow:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

#### Deviation, Failure, or Malfunction Reporting (Conditions 46 to 47)

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

#### Permit Modification (Condition 51)

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1605. Applicability, Permits For Major Stationary Sources and Modifications  
Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications  
Locating in Nonattainment Areas

Malfunction as an Affirmative Defense (Conditions 65 to 68)

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in Conditions 65 to 68 and Conditions 46 to 47. For further explanation see the comments on Conditions 46 to 47.

This general condition cites the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction

9 VAC 5-80-110. Permit Content

**STATE ONLY APPLICABLE REQUIREMENTS**

Columbia Gas Transmission Corporation did not identify any state-only requirements in their application, and all requirements in their minor NSR permits are federally enforceable. Therefore, no state-only requirements have been included in the permit.

**FUTURE APPLICABLE REQUIREMENTS**

Columbia Gas Transmission Corporation did not identify any future applicable requirements in their application, and the staff is unaware of any applicable requirements that the facility could become subject to during the life of the Title V permit. Therefore, no applicable requirements have been included in the permit.

**INAPPLICABLE REQUIREMENTS**

The provisions of 40 CFR Part 98 – Mandatory Greenhouse Gas Reporting require owners and operators of general stationary fuel combustion sources that emit 25,000 metric tons CO<sub>2</sub>e or more per year in combined emissions from such units, to report greenhouse gas (GHG) emissions, annually. The definition of “applicable requirement” in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program.

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after January 1, 2011. The current state minor NSR (or PSD) permit for the Columbia Gas facility contains no GHG-specific applicable requirements and there have been no modifications at the facility requiring a PSD permit. Therefore, there are



no applicable requirements for the facility specific to GHG.

The nitrogen monitoring requirements of 40 CFR 60, Subpart GG, §60.334 have been waived in accordance with letter dated 8/14/87 from EPA Region III (Attachment G).

40 CFR 60, Subpart JJJJ, the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines do not apply to the emergency generator (G1) at the Shenandoah Compressor Station; the engine was constructed before the June 12, 2006 applicability date.

40 CFR 60, Subpart KKKK, the Standards of Performance for Stationary Combustion Turbines does not apply to the two turbines (1 and 2) at the Shenandoah Compressor Station; the turbines were constructed before the February 18, 2005 applicability date in §60.4305(a).

40 CFR 63, Subpart JJJJJ, the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boiler at Area Sources is not applicable to the boiler at the facility. The natural gas-fired boiler (BLR1), rated at 2.1 MMBtu/hr is not subject to the requirements of 40 CFR 63 Subpart JJJJJ in accordance with §63.11195(e) since it is a gaseous fueled boiler.

40 CFR 63, Subpart ZZZZ, the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines are not applicable to the two turbines (1 and 2) at the Shenandoah Compressor Station. The turbines do not use reciprocating motion to convert heat energy into mechanical work, and therefore do not meet the regulatory definition of stationary reciprocating internal combustion engine in §63.6675. This subpart is applicable to the emergency generator (G1) and all requirements were incorporated as appropriate.

40 CFR 64, the Compliance Assurance Monitoring (CAM) rule does not currently apply to Shenandoah Compressor Station. CAM applies to pollutant-specific emission units with pre-control device emissions of regulated pollutants exceeding major source thresholds. The units must have control devices in place and applicable requirements for the subject pollutant. The rule requires sources to monitor the operation and maintenance of the control devices to ensure compliance with applicable requirements. The Shenandoah Compressor Station does not have any controls on its emission units. Therefore, the Compliance Assurance Monitoring Rules do not apply.

In addition to the standards listed above, the facility indicated that 40 CFR 63 Subpart YYYY, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, is not an applicable requirement for the Columbia Gas Transmission Corporation - Shenandoah Compressor Station. This standard applies to existing combustion turbines located at a major source of hazardous air pollutants (HAPs). This facility is not a major source of HAP emissions (defined as having the potential to emit 10 tons/yr for individual HAPs or 25 tons/yr for combined HAPs).

## COMPLIANCE PLAN

The facility is currently in compliance with all applicable requirements. No compliance plan was included in the application or in the permit.

## INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emissions units include the following:

**Table V. Insignificant Emission Units**

Emission Unit No.	Emission Unit Description	Citation <sup>1</sup> (9 VAC_)	Pollutant(s) Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
AO1	Pipeline Liquids Tank	5-80-720 B	VOC, benzene, ethylbenzene, hexane, toluene, xylene	1,000 gallons
AO2	Pipeline Liquids Tank	5-80-720 B	VOC, benzene, ethylbenzene, hexane, toluene, xylene	1,000 gallons
AO3	Water Mixture Tank (Wastewater)	5-80-720 B	VOC	1,000 gallons
FUG	Equipment Leaks and Blowdown	5-80-720 B	VOC	-

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

## CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. Therefore, all portions of the Title V application are suitable for public review.

## **PUBLIC PARTICIPATION**

A public notice regarding the draft permit was placed in the *Page News & Courier*, on January 30, 2014. West Virginia, the only affected state, was sent a copy of the public notice in an email dated \_\_\_\_\_. All persons on the Title V mailing list were also sent a copy of the public notice via either letter or email dated \_\_\_\_\_. Public comments are accepted from January 30, 2014 to March 3, 2014.

EPA was notified of the public notice and sent a copy of the Statement of Basis and draft permit on January 28, 2014. The 45-day EPA review period runs concurrently with the public comment period.

## **ATTACHMENTS**

ATTACHMENT A:	2012 Annual Emissions Update
ATTACHMENT B:	Minor New Source Review Permit Issued on 8/23/91
ATTACHMENT C:	Minor New Source Review Permit Amendment dated 1/27/94
ATTACHMENT D:	Minor New Source Review Permit Amendment dated 3/10/95
ATTACHMENT E:	Minor New Source Review Permit Amendment dated 8/6/98
ATTACHMENT F:	Minor New Source Review Permit Amendment dated 9/16/08
ATTACHMENT G:	Emission Calculations
ATTACHMENT H:	EPA letter dated 08/14/1987

For Statement of Basis Attachments, please contact Cassandra Frysinger at:  
[Cassandra.Frysinger@deq.virginia.gov](mailto:Cassandra.Frysinger@deq.virginia.gov) or (540) 574-7863